WHAT IS CLAIMED IS:

1. A line driver, comprising:

a differential amplifier having an inverting output terminal, a non-inverting output terminal, an inverting input terminal, and a non-inverting input

5   terminal;

a first resistor coupled to the inverting input terminal;

a second resistor coupled to the non-inverting input terminal; and

a resistive feedback network, having a plurality of resistors in symmetric configuration to couple to the inverting output terminal, the non-inverting

10   output terminal, the inverting input terminal, and the non-inverting input terminal to form a feedback network.

2. The line driver of claim 1, wherein the resistive feedback network further includes a third resistor, a fourth resistor, a fifth resistor, a sixth resistor, a first match resistor, and a second match resistor, wherein a first

15   terminal of the third resistor is coupled to the non-inverting output terminal and a first terminal of the first match resistor, a second terminal of the third resistor is coupled to the inverting input terminal and a first terminal of the sixth resistor, a first terminal of the fourth resistor is coupled to the inverting output terminal and a first terminal of the second match resistor, a second

20   terminal of the fourth resistor is coupled to the non-inverting input terminal and a first terminal of the fifth resistor, a second terminal of the fifth resistor is coupled to a second terminal of the first match resistor, and a second terminal of the sixth resistor is coupled to a second terminal of the second match resistor.

3. The line driver of claim 2, wherein the resistive feedback network further includes further comprising:

a seventh resistor and an eighth resistor, wherein a first terminal of the seventh resistor is coupled to the inverting input terminal, a second terminal of the seventh resistor is coupled to the second terminal of the fifth resistor, a first terminal of the eighth resistor is coupled to the non-inverting input terminal, and a second terminal of the eighth resistor is coupled to the second terminal of the sixth resistor.

4. The line driver of claim 2, further comprising:

a ninth resistor and a tenth resistor, wherein a first terminal of the ninth resistor is coupled to the non-inverting input terminal, a second terminal of the ninth resistor is coupled to the first terminal of the third resistor, a first terminal of the tenth resistor is coupled to the inverting input terminal, and a second terminal of the tenth resistor is coupled to the first terminal of the fourth resistor.

5. A line driver, comprising:

a differential amplifier having an inverting output terminal, a non-inverting output terminal, an inverting input terminal, and a non-inverting input terminal;

a first resistor unit coupled to the inverting input terminal;

a impedance matching resistor unit coupled to the non-inverting output terminal; and

a resistive feedback network, having a plurality of resistors in symmetric configuration, wherein the resistive feedback network further includes:

a second resistor unit coupled to the impedance matching resistor unit and the inverting input terminal;

a third resistor unit coupled to the non-inverting output terminal and the inverting input terminal;

5 a fourth resistor unit coupled to the impedance matching resistor unit and the inverting input terminal; and

a fifth resistor unit coupled to the inverting output terminal and the inverting input terminal;

wherein each of the first resistor unit, the second resistor unit, the third

10 resistor unit, the fourth resistor unit, the fifth resistor unit, and the impedance matching resistor unit includes a plurality of resistors in symmetric configuration.

6. A line driver, comprising:

a differential amplifier having an inverting output terminal, a non-inverting

15 output terminal, an inverting input terminal, and a non-inverting input terminal;

a first resistor unit coupled to the inverting input terminal;

a impedance matching resistor unit coupled to the non-inverting output terminal; and

20 a resistive feedback network, having a plurality of resistors in symmetric configuration, wherein the resistive feedback network further includes only three of the following resistor units:

a second resistor unit coupled to the impedance matching resistor unit and the inverting input terminal;

a third resistor unit coupled to the non-inverting output terminal and the inverting input terminal;

a fourth resistor unit coupled to the impedance matching resistor unit and the inverting input terminal; and

5   a fifth resistor unit coupled to the inverting output terminal and the inverting input terminal;

wherein each of the first resistor unit, the second resistor unit, the third resistor unit, the fourth resistor unit, the fifth resistor unit, and the impedance matching resistor unit includes a plurality of resistors in

10   symmetric configuration.

7. A line driver, comprising:

a differential amplifier having an inverting output terminal, a non-inverting output terminal, an inverting input terminal, and a non-inverting input terminal;

15   a first resistor unit coupled to the inverting input terminal;

a impedance matching resistor unit coupled to the non-inverting output terminal; and

a resistive feedback network, having a plurality of resistors in symmetric configuration, wherein the resistive feedback network further includes only

20   two of the following resistor units:

a second resistor unit coupled to the impedance matching resistor unit and the inverting input terminal;

a third resistor unit coupled to the non-inverting output terminal and the inverting input terminal;

14

a fourth resistor unit coupled to the impedance matching resistor unit and the inverting input terminal; and

a fifth resistor unit coupled to the inverting output terminal and the inverting input terminal;

5   wherein each of the first resistor unit, the second resistor unit, the third resistor unit, the fourth resistor unit, the fifth resistor unit, and the impedance matching resistor unit includes a plurality of resistors in symmetric configuration.